

Claims

1. A needle selecting apparatus for a weft knitting machine comprising a needle bed having a plurality of needle grooves in rows; a carriage including a selecting mechanism and a cam mechanism, the carriage traveling along the needle bed; and knitting needles each disposed in the needle groove and each having a butt on which the cam mechanism of the carriage acts, the needle selecting apparatus comprising:

    selectors disposed in each of the needle grooves, for shifting a selecting jack to select any of positions predetermined in correspondence with a plurality of knitting operations including non operation, the selecting jack being capable of being selectively separated from the cam mechanism by pressing the butt from the carriage in cooperation with the selecting mechanism of the carriage with respect to the butt of the knitting needle within each needle groove, the positions being established such that an initial position of the selecting jack corresponds to a non-operative position;

    a holding member disposed in a predetermined position in a vicinity of each of the selecting jacks located in the initial position at a distance from the selecting jack; and

    a locking member provided for each of the selecting jacks, wherein when the selecting jack is pressed from the carriage at the initial position, the locking member is fitted in a space between the selecting jack and the holding member formed on

the needle groove so as to maintain the pressed condition of the selecting jack by the locking member inserted between the selecting jack and the holding member, and when the selecting jack is shifted to a position other than the non-operative position by the selector, the locking member is separated from the space so as to release the pressed condition of the selecting jack.

2. The needle selecting apparatus of claim 1, wherein the holding member disposed within each needle groove is a penetrating member which penetrates the needle bed in a direction where the needle grooves are provided in rows and contacts the selecting jack on the side facing the carriage to hold the selecting jack within the needle groove, and

the locking member is forced by a spring to be fitted in a space between the penetrating member and the selecting jack on a side facing the carriage.

3. The needle selecting apparatus of claim 2, wherein the selecting jack has a thin-wall portion which has a small thickness on both sides in a plate thickness direction and is disposed in a vicinity of the penetrating member to face the penetrating member in the initial position,

the locking member has a forked engaging portion for receiving the thin-wall portion from both sides in the thickness

direction, and a fitting portion allowed to enter into the space between the penetrating member and the selecting jack on the side facing the carriage, and

the needle selecting apparatus further comprises a spring provided between the thin-wall portion of the selecting jack and the engaging portion of the locking member, for forcing the locking member so as to cause the fitting portion to enter into the space.

4. The needle selecting apparatus of claim 2, wherein the selecting jack has a groove which is substantially U-shaped and has a smaller width at an opening of the groove and is open at a position which is disposed in the vicinity of the penetrating member and faces the penetrating member in the initial position, and

the locking member has a forked engaging portion which is inserted into the groove and pressed from both sides of the groove to be forced toward the penetrating member, and a fitting portion allowed to advance into the space between the penetrating member and the selecting jack on the side facing the carriage.

5. The needle selecting apparatus of claim 1, wherein the holding member within each needle groove is a concave portion formed on a side of the selecting jack, and

the locking member is a plate spring formed on a side

surface of the selecting jack and having a tip which is forced so as to project toward the side and is fitted into the concave portion so as to prevent the selecting jack from being displaced toward the carriage.

6. The needle selecting apparatus of any one of claims 1 to 5, wherein the cam mechanism of the carriage has a function for retracting a knitting needle whose butt is not separated prior to execution of the plural knitting operations.